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1 of 3

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

PATENT APPLICATION

Prior Application:

Serial No. : 09/235,620

Filing Date : January 22, 1999

Group Art Unit : 3635

Examiner : J. Thissel

Status : Pending

Attorney Case: 720A

jc564 U.S. PTO

09/490268

01/24/00

Assistant Commissioner for Patents
Washington, D.C. 20231

CONTINUATION/DIVISIONAL APPLICATION UNDER 37 CFR § 1.53(b)

Sir:

This request for filing a ☒ continuation ☐ divisional application under 37 CFR § 1.53(b) of prior Application Serial No. 09/235,620, filed on January 22, 1999 entitled WALL PANELING ASSEMBLY AND SYSTEM.

Enclosed are the following papers relating to the above-identified application:

1. ☒ Specification (Total Pages: 25)
2. ☒ Drawings (Total Sheets: 5)
3. ☒ Copy of "Declaration and Power of Attorney" from prior application (Total Sheets: 2)
4. ☐ Newly executed "Declaration and Power of Attorney" (if **adding** inventors) (Total Sheets:)
5. ☒ Newly executed "Assignment and Agreement" (if **adding** inventors) (Total Pages: 2)
6. ☒ Incorporation By Reference

The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 3, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

7. ☐ **DELETION OF INVENTOR(S)**

Signed statement attached (under 37 CFR § 1.63(d)(2)) deleting inventor(s) named in the prior application

jc760 U.S. PTO
01/24/00

09/490268-012100

8. ☐ Information Disclosure Statement

9. ☐ Copy of "Extension of Time"

10. ☒ Other:

Verified Statement Claiming Small Entity Status

11. ☐ Cancel the following original claims in the prior application before calculating the filing fee: Claims 1-39

CLAIMS AS FILED IN THE PRIOR APPLICATION, LESS ANY CLAIMS CANCELLED ABOVE				
	NO. FILED	NO. EXTRA	RATE	CALCULATIONS
Total Claims	23 - 20 = 3	3	x \$9 =	27.000
Independent Claims	7 - 3 = 4	4	x \$39 =	156.000
Multiple Dependent Claim(s), if applicable			x \$270 =	0
Basic Fee				\$ 345.00
			TOTAL FEE	\$ 528

12. ☒ Amend the specification by inserting before the first line this sentence:

This is a ☒ continuation ☐ divisional of Application Serial No. 09/235,620
filed on January 22, 1999.

13. ☐ Preliminary Amendment

14. Amendment Fee:

- ☐ No additional fee is required.
☐ An additional amendment fee is calculated as follows:

CLAIMS AS AMENDED						
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NO PREVIOUSLY PAID FOR	EXTRA	RATE	ADDITIONAL FEE
TOTAL		MINUS		0	X \$ 22	\$ 0
INDEP		MINUS		0	X \$ 82	\$ 0
MULTIPLE DEPENDENT CLAIM(S) first presented with this amendment, if applicable					X \$270	\$ 0
TOTAL ADDITIONAL FEE FOR THIS AMENDMENT						\$ 0

15. ☐ Please charge the total amount of \$ to **Deposit Account No.** _____.

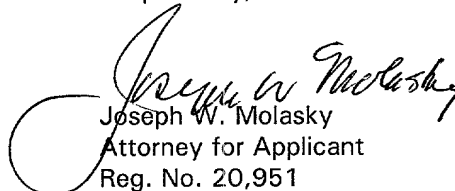
Duplicate copies of this letter are enclosed. In the event of non-payment of improper payment of a required fee, the Commissioner is authorized to charge or to credit **Deposit Account No.** _____ as required to correct the error.

16. ☐ Enclosed is Check No. 5877 in the amount of \$578 to cover the Filing Fee as calculated in Calculation Table under Item No. 11, page 2.

The Assistant Commissioner for Patents is hereby authorized to treat any concurrent or future reply, requiring a petition for extension of time under 37 CFR § 1.136 for its timely submission, as incorporating a petition for extension of time for the appropriate length of time if not submitted with the reply.

Please address all correspondence to: **Joseph W. Molasky & Associates, 4 S. Limekiln Pike, Chalfont, Pennsylvania 18914** and telephone calls should be made to me at **(215) 822-3324**.

Respectfully,


Joseph W. Molasky
Attorney for Applicant
Reg. No. 20,951

Date: Jan 24 2000

**VERIFIED STATEMENT CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) & 1.27(b))--INDEPENDENT INVENTOR**

Docket Number (Optional)

720

Applicant or Patentee: Glenn H. Bostock

Serial or Patent No.: _____

Filed or Issued: _____

Title: WALL PANELING ASSEMBLY AND SYSTEM

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees to the Patent and Trademark Office described in:

- ☒ the specification filed herewith with title as listed above.
☐ the application identified above.
☐ the patent identified above.

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ☐ No such person, concern, or organization exists.
☒ Each such person, concern or organization is listed below.

Bostock Company, Inc.
P.O. Box 322
Pipersville, PA 18947

Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Glenn H. Bostock

NAME OF INVENTOR

Signature of inventor

Date

NAME OF INVENTOR

Signature of inventor

Date

NAME OF INVENTOR

Signature of inventor

Date

VERIFIED STATEMENT CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) & 7(c))--SMALL BUSINESS CONCERN

Docket Number (Optional)

720

Applicant or Patentee: Glenn H. Bostock
Serial or Patent No.: _____
Filed or Issued: _____
Title: WALL PANELING ASSEMBLY AND SYSTEM

I hereby declare that I am

- ☒ the owner of the small business concern identified below:
☐ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF SMALL BUSINESS CONCERN Bostock Company, Inc.
ADDRESS OF SMALL BUSINESS CONCERN P.O. Box 322
Pipersville, PA 18947

I hereby declare that the above identified small business concern qualifies as a small business concern as defined in 13 CFR 121.12, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees to the United States Patent and Trademark Office, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention described in:

- ☒ the specification filed herewith with title as listed above.
☐ the application identified above.
☐ the patent identified above.

If the rights held by the above identified small business concern are not exclusive, each individual, concern or organization having rights in the invention must file separate verified statements averring to their status as small entities, and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d), or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization having any rights in the invention is listed below:

- ☒ no such person, concern, or organization exists.
☐ each such person, concern or organization is listed below.

Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING Glenn H. Bostock
TITLE OF PERSON IF OTHER THAN OWNER President
ADDRESS OF PERSON SIGNING 440 Blairmill Road, Hatboro, PA 19440
SIGNATURE Glenn H. Bostock DATE 1/22/99

PATENT APPLICATION PAPERS

OF

GLENN H. BOSTOCK

FOR: A NOVEL PANELING SYSTEM

This invention relates to a novel wall paneling system and to a method for its assembly.

More particularly, this invention relates to wall panels which are configured to be joined to any number of like-configured panel pieces via a
5 unique interlocking arrangement.

This invention can be used to create panel assemblies of all types; however, it is especially suitable for use in elevators whose sides are framed. Also, it can be secured directly onto studs without the need for an underlying drywall.

10

BACKGROUND OF THE INVENTION

There are several known systems for creating wall panel assemblies in homes, offices and elevators.

Systems which are most commonly used in elevators include, for
15 example:

- (1) Panels secured to a support structure by the use of Z-clips;
- (2) Panels which are adhesively secured to a wall, including walls fabricated from extruded aluminum supports; and
- 20 (3) Panels which employ an extruded spline-type fastening system.

Walls constructed with permanence as, for example, walls in homes and buildings, usually employ a drywall secured to studs. Once the drywall has been put in place, paneling, plaster or other coverings such as paint, may be used to enhance its appearance.

The present invention is an improvement over known systems because it provides for panels which can be interlockingly joined to one another, and to a support structure, including drywall, with relative ease. Moreover, this invention allows a user to remove individual panels and/or disassemble the entire system with a facility that is not possible with known systems.

OBJECT OF THE INVENTION

It is an object of this invention to provide panel pieces which can be interlockingly joined to one another so as to create a paneling system which is convenient, secure and easily disassembled.

A preferred object provides for the paneling of elevators where panel pieces are usually large and installation is labor intensive. The present invention overcomes these difficulties by providing panels whose interlocking abilities make it possible for an installer to assemble large panels with a facility and economy which was not heretofore possible.

SUMMARY OF THE INVENTION

The panel pieces of this invention are joined to one another by the unique interlocking engagement of their respective end segments and they can be secured to any type of support structure as, for example, an existing wall, a wall frame, wall studs or the like. Moreover, the panels may be joined to one another in a horizontal arrangement, a feature which makes them uniquely suitable for installing wall panels in an elevator.

In its broadest aspects, the panels of this invention are equipped with opposing end segments which matingly engage the like-configured segments of an adjacent panel piece. Each panel piece is comprised of a front side, a rear side and opposing edge faces which interlockingly engage the edge
5 faces of a like-configured panel. In this embodiment, an edge face is formed to include an elongate projection or tongue and an opposing edge face is formed to contain an elongate recess or groove.

Moreover, it is a feature of this invention that the depth of the recess be of such dimension as to exceed the length of the projection.

10 As a result, the panel pairs will combine in such manner that the projection end of one panel does not come into contact with the recessed base of the adjoining panel and there is formed instead (between the projection end and recessed base) an elongate space which extends inwardly from the respective ends of each opposing side face. This elongate space is
15 sometimes referred to hereinafter as an accent line.

Accordingly, it will be seen that a point of novelty in this invention lies in the configuration of each panel's opposing edge face. These edge faces are configured to matchingly engage the edge faces of like-configured panels so that they can be joined to one another to create a panel system.

20 Conversely, a paneled system can be disassembled by simply withdrawing the panel pieces one from the other.

According to one embodiment of this invention, the opposing faces of each panel are a tongue and groove and adjacent panels are joined to one

another by bringing into engagement the tongue of one panel with the groove of an adjacent panel.

5 In this tongue and groove arrangement, it is essential that the groove be greater in depth than the length of the tongue so that the joining of one panel to another will result in an elongate space or accent line where the panel pieces engage one another.

10 In this assembly, the tongue and groove configuration may appear on a panel piece as one pair only, that is, on opposing sides of a panel or, alternatively, they may exist in tandem, that is, opposite one another, on all four sides of the panel piece. An illustration of this tandem arrangement is illustrated in the drawings in Figure 10.

15 Another embodiment provides for a panel assembly in which the panel piece is characterized by a single tongue on one edge and a single groove on the opposing edge. In this embodiment, the panel piece is also comprised of a front side, a rear side and a pair of opposing edge faces for interlockingly engaging the edge faces of a like-configured panel; one edge face being a tongue and the second edge face being a groove which is defined by a rear leg, a front leg and a base member, with the proviso that the rear leg be greater in length than the front leg.

20 The tongue and groove have predetermined lengths and depths such that the depth of the groove is greater than the length of the tongue, as a result of which, in their assembled mode, a space is formed *in situ* between the tongue end and the base of the groove.

Still another embodiment provides for a panel piece in which the opposing edge faces are characterized by beveled recesses which are intended for matching engagement with the beveled faces of a second panel piece.

5 In this arrangement, the panel is also comprised of a front side and a rear side; however, the two opposing edge faces are formed with beveled edges, one edge face being formed with a beveled recess which extends from one side of the panel piece to the other; this recess being defined by a projecting first flange whose outer wall is coextensive with the rear side of the
10 panel piece.

A second opposing edge face also contains a beveled recess which matches the beveled recess of the first edge face; this recess is defined by a projecting flange, the length of which is greater than that of the first flange so that in joining together two panel pieces there is formed between the
15 adjoining panels an elongate space or accent line.

The virtue of this invention resides in the elimination of that cantilever force effect, which is associated with known panel systems. This cantilever effect results when the tongue end of one panel comes into contact with the base of the groove in an adjoining panel. The present invention eliminates
20 this cantilever effect by transferring the exerted force onto the rear leg and shoulder of the adjoining panel pieces. The result is a shear force which distributes itself evenly onto the abutting portions of the joined panels and, also, onto the fastening means employed. As a result, the integrity of the

panels is enhanced and they are less likely to fracture.

Also, in this arrangement, the assembled panels are not rigidly held and, instead, they are flexible and have the ability to shift slightly and thus avoid splitting. Moreover, when the panel pieces of this invention are
5 attached to a support structure by screw means, they are removable and can be easily replaced.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is perspective view showing the paneling assembly of this
10 invention installed in an elevator (in phantom).

Figure 2 is fragmentary isometric view of two unassembled panel pieces one of which is secured to a support structure.

Figure 3 is a cross-sectional assembled side view of the panel pieces shown in Figure 2 taken along line 3-3.

15 Figure 4 is a fragmentary perspective view of a top panel piece shown with fastening devices in various stages of engagement.

Figure 5 is a cross-sectional side view of the top panel piece of Figure 4 taken along line 5-5.

Figure 6 is a fragmentary perspective view of a bottom panel piece
20 shown with fastening devices in various stages of engagement.

Figure 7 is a cross-sectional side view of the bottom panel of Figure 6 taken along line 7-7.

Figure 8 is a fragmentary perspective view of a panel piece equipped

with a Z-clip fastening device.

Figure 9 is a cross-sectional side view of the panel piece and Z-clip device of Figure 8 taken along line 9-9.

Figure 10 is a partial isometric view of a panel piece being inserted into a panel assembly.

Figure 11 is a fragmentary isometric view of two unassembled panel pieces in which the opposing edge faces are beveled.

Figure 12 is a cross-sectional assembled side view of Figure 11 taken along line 12-12.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Figure 1 illustrates an exemplary wall paneling assembly 10 in accordance with this invention. As shown, a plurality of panel pieces are provided, each having four edges, the top edge of which includes a groove and the bottom edge, an accommodating tongue. This tongue and groove arrangement and the assembly of the individual panel pieces is discussed hereinbelow in detail and it is further illustrated in Figures 1-3 and Figures 10-13.

Included in the wall paneling system of Figure 1, are molding pieces which can be added to the assembled panels as a finishing touch to enhance the visual effect. A typical top molding piece 4 includes a tongue that is inserted into the groove of a topmost panel 2 (Figure 1).

In the same manner, a bottom molding piece 6 having a flat surface

and equipped with an accommodating groove can be used as a base member and fitted into the tongue of a bottom panel **8** (Figure 1).

In this assembly **10**, the panel pieces of each wall terminate at their respective corners some small distance from one another and they form that space which is shown as **12** in Figure 1. The object of space **12** is to make allowance for any shifting or movement in the support structure. Moreover, it has been found, in practice, that installation is facilitated when adjoining walls are not so closely fitted as to abut against one another.

In their assembled mode, the panels of this invention exhibit those accent lines which are shown as **14** in Figure 1 and they are registry with the accent lines of adjacent panel pieces; however, this is an optional feature and, in practice, the accent lines **14** can be made virtually invisible by bringing the panel pieces into abutting contact.

The panel pieces of this invention may be mounted onto any suitably secure structure, solid or framed. Typical of such structures are, for example, stationary walls, elevator walls or the like.

In addition, the panel pieces may be attached to the framework of a stationary wall, an elevator wall, or the like, or the panel pieces can be attached to wall studs. The panel pieces may also be used as a cover to hide gaps in a wall. It will be appreciated, therefore, that the paneling assembly of this invention is not limited to any particular form of wall structure.

Figures 2 and 3 illustrate that embodiment in which assembly is achieved by inserting the elongate projection or tongue **20** of one panel **18**

into the elongate recess or groove **22** of a like panel **16**. As shown in Figures 2 and 3, a typical panel piece consists essentially of a front side **24**, a rear side **26** and two accommodating edge faces which can be interlockingly joined to a like panel.

5 One edge face is in the form of an elongated projection or tongue **20** which extends longitudinally from the rear side **26** of the panel piece **16** so that the rear wall of the tongue is coextensive with the rear wall of the panel **16**. The opposing panel edge is an elongated recess or groove **22** defined by a rear leg **28**, front leg **30** and the recessed base member shown as **32** in
10 Figure 2. The rear side of leg **28** is also coextensive with the rear wall of the panel piece **16** and its dimensions are such that the length of the rear leg **28** is greater than that of leg **30**.

 In general, assembly is achieved by securing a first panel to a wall or similar support structure and mating it to a second panel piece and this
15 process is repeated with any desired number of panel pieces.

 The installation of a typical paneled assembly is described with particularity hereinbelow by making reference to a wall as the support structure. Also, screws are described as the fastening means; however, the reference to a 'wall' and 'screw means' is for illustration only and those skilled
20 in the art will appreciate that any suitable support and any suitable fastening means may be substituted therefor without departing from the spirit or scope of this invention.

 Typical of those fastening means which may be employed include, for

example, nails, clips, rivets, staples or adhesives and the like.

In practice, in a typical installation, the panel pieces are placed one atop the other and secured to a wall by screws which are inserted through preformed apertures. Once this has been done, a second panel piece **18** is
5 laid against the first and its tongue is snugly inserted into the mating recess or groove **22** of the first panel piece **16**.

The tongue is neatly received by the groove but it is significant to note that the only interface which occurs is a mating of flange **36** with shoulder **38** and the engagement of the two panels' respective sidewalls, that is, the
10 sidewall **56** of tongue **20** and the front sidewall of recess **22**.

Equally significant is the fact that the depth of recess **22** is greater than the length of tongue **20** and no contact occurs between the terminal ends of their respective edge faces; instead, the base of the tongue **42** and the base of the groove **32** are separated from one another by that area or space which
15 is shown as **44** in Figure 3.

The space **44** is significant because it serves to separate the tongue end of one panel from the groove base of a matching panel and thus avoids that cantilever force which is associated with prior art paneling systems, that is, the force which results when the tongue end of one panel comes into
20 abutting contact with the groove base of an adjoining panel. In the present invention, the assembled panels rely for their support on the contact between flange **36** of panel **16** and shoulder **38** of panels **18**. This contact and the shear force absorbed by the mounting screws **34** virtually eliminates the

cantilever force effect associated with existing panel structures.

In addition to improving on existing panel systems, the present invention also affords an improvement in aesthetics and design. This is seen when two panels are joined together, in the manner described hereinabove, that is, one atop the other, in which event their adjoining front faces form an elongate space which, in the completed assembly gives the appearance of an accent line **14**. This accent line can also be enhanced by using contrasting color schemes as, for example, by coloring the panel surfaces with light hues and using darker tones or the color black to highlight those elongate areas which form the accent line **14**.

Although size is not important, it is critical to this invention that the rear leg **28** of each panel (Figure 2) be of such dimension as to exceed that of tongue **20** and that the distance which is defined by the underside of flange **36** and the terminal end **46** of tongue **42** (Figure 2). This parameter is shown as "d" in Figure 2.

The rear leg **28** also serves as the mounting means for securing the panel pieces to a wall or other support structure. Accordingly, the rear leg must provide sufficient surface area for forming apertures to accommodate mounting screws or nails or the like.

If screws or nails are employed, their heads are conveniently covered by the tongue **20** of an adjoining panel piece as shown in Figure 3.

Also shown in Figure 3, is a top molding piece **48** fitted into tongue **50** of an accommodating panel as a finishing piece. This is an optional feature

but, if omitted, the screws **34** would, under normal conditions, be hidden from view by the front leg of the top panel piece **18**.

Also shown in Figure 3 is a flat edged bottom panel **52** which is installed as a finishing piece so as to bring the bottom panels into registry with
5 the floor surface.

The following two paragraphs describe a typical embodiment for installing the paneling assembly of this invention onto a wall.

A panel having a flat bottom edge **52** is placed on the floor of the room which is being paneled adjacent to the wall **54** (Figure 3) and a screw **34** is
10 driven through a screw hole (not shown in Figure 3) of the rear leg of the panel piece. The panel pieces which are being attached to a wall are positioned in such manner that the screw holes are in registry with the frame or studs in the wall structure.

A second panel piece, shown in Figure 3 as item **16**, is attached to the
15 bottom panel piece **52** by fitting the tongue **26** of the latter into the groove **24** of the former, and this attachment means is repeated for all subsequent panel pieces until the room is fully paneled. Thereafter, a molding piece **48** is attached to the topmost panel **18** by inserting the tongue **50** of said molding into the groove of the panel.

20 Figures 4 and 5 illustrate an alternative means for securing the panel pieces to a support structure. In this embodiment, the topmost panel piece **60** is secured to a wall **62** by the use of clips **64**.

As illustrated in Figure 4, the top panel piece **60** is defined by a flat

surface **66** into which has been formed slotted openings **68** for receiving the hook ends **70** of the clip which is to be inserted. Also included in the clip **64** is an elongated slot **72** through which a screw **74** can be driven for mounting the clip and panel to a wall **62**.

5 As shown in Figure 5, the rear side of panel **60** also includes a recess **72** for receiving the clip **64**. This recess **72** allows the top panel piece **60** to lay flush against the wall **62**.

Although two clips are shown in Figure 5, the number used for each panel piece may vary depending on the size and weight of the panel.

10 Figures 6 and 7 illustrate the use of clips **80** for attaching a bottom panel piece **82** to a wall **84**. In this embodiment, the clip **80** contains a plurality of screw holes **86** and **88**. The bottom surface **90** of the panel **82** is flat and includes slotted openings **92** and **94** for receiving the hook ends **96** of the clip **80**. In practice, the clip **80** is secured to the wall by means of screws
15 **98** and **100** which are inserted through the screw holes **86** and **88**. Thereafter, the bottom panel piece **82** is inserted onto the clip **80** and the hook member **96** of the clip **80** is inserted into the slotted opening **94**.

In this embodiment, the bottom panel piece **82** is in close proximity to the floor **102** so as to make allowance for clip **80**. Also, the rear side of the
20 panel **82** includes a recess **104** into which the projection of the clip **80** may be fitted. The recess **104** allows the panel to lay flush against the wall **84** when placed over the clips **80**.

Although two mirror clips **80** are shown in this embodiment, the number

of clips may vary depending on the size and weight of the panel piece **82**.

Figures 8 and 9 illustrate the use of a Z clip **110** for attaching a top panel piece **112** to a wall **114**. This Z clip **110** is attached to the panel piece **112** with the open end of the Z clip **110** facing downwards. A second Z clip **116** is attached to the wall **114** with its open end facing upwards. These Z clips **110** and **116** are attached to the panel piece **112** and the wall **114** by screw means **118**.

To achieve assembly, the open end of Z clip **110** is mated to the open end of Z clip **116**. Also, in this assembly, it is to be noted that a recess **120** is formed into the rear side of the panel piece **112** so that it may accommodate the Z clip and at the same time, lay flush against the wall **114**. Again, the number of clips **116** employed will vary depending on the size and weight of the panel piece **90**.

Another embodiment of this invention is illustrated in Figure 10, which shows a panel piece **130** containing two tongues **132** and two grooves **134** located on the top and left edge of the panel piece. The grooves **134** each contain a rear leg **136** and a front leg **138**. The tongues **132** are located on adjacent edges of the panel piece **130** and the grooves **134** are located on the adjacent edges of the same panel piece **130** opposite the edges containing the tongues **132**. It is to be understood that such an arrangement is exemplary and the number and placement of the tongue/groove combinations is discretionary.

The panel pieces **130** in this embodiment provides for the tongue and

groove attachment of panel pieces in a horizontal as well as vertical arrangement so that a wall which is much larger than the individual panel pieces may be covered. In its assembly, the tongues **132** are inserted into the grooves **134** of previously assembled panel pieces **130** and screws **140** are threaded into accommodating screw holes **142** in the rear leg **136** of the panel piece **130**. Thereafter, the tongues **132** of additional panel pieces can be inserted into the screwed-in grooves **134** of the previously attached panel pieces.

While the size of the panel pieces **130** is discretionary, a wall paneling assembly that utilizes both horizontal and vertical tongue and groove members will usually employ panels **130** whose length is greater than their height.

Another embodiment of this invention provides for a panel piece whose opposing edge faces are beveled to accommodate the matching edge face of a like-configured panel.

When such a panel is mated with the face of a second like-configured panel, their respective beveled recesses fit neatly one into the other and a mating of the panel pieces is achieved. This embodiment is illustrated in Figures 11 and 12.

As shown in Figures 11 and 12, the panel piece **150** is defined by a front side **152**, a rear side **154** and an edge face having a beveled recess **156**. The beveled recess **156** of this edge face, extends from one side of the panel piece to the other and it is defined by a projecting flange **158** whose

outer wall is coextensive with the front side **152** of the panel piece **150**.

The mating of one panel piece to another is achieved by mating the beveled recess of panel piece **150** with the beveled recess of a second panel piece **160**. The edge face of this second panel matches the beveled recess
5 formed in the edge face of the first panel piece **150** and it is defined by a projecting flange **162** whose outer wall is coextensive with the rear side of the panel piece. This projecting flange **162** is greater in height than that of flange **158** so that when the respective recesses of both panel pieces are assembled (Figure 12), an elongate space is formed between the end member of flange
10 **158** and the shoulder **166** of panel 160.

The interrelationship between the beveled recesses of the joined panel pieces results in a firm fit; however, the feature which is most critical to this assembly lies in their respective flange members **158** and **162**. As shown in Figure 12, the bottom side of flange **158** does not engage the shoulder **166** of
15 panel piece **160**, as a result of which, an elongate recess or space is created between these two panel pieces.

This elongate space is an accent line and it also has the salutary effect of eliminating that cantilever force which is associated with known panel assemblies. Instead of a cantilever force, the adjoining panel pieces fit neatly
20 at their beveled recess faces and this match converts the cantilever effect into a shear force which is distributed evenly over the full extent of the opposing edge faces.

In another embodiment of this invention, the panel pieces of the wall

paneling assembly contain a covering. This covering may be plastic laminate, glass, stone, sheet metal, stainless steel, brass, paint, marble, veneer or a solid surface material such as Corian®. Also, while the actual panel pieces can be derived from any source, the preferred materials are plywood,
5 flakeboard and foam.

In yet another embodiment of this invention, the rear of the panel pieces is laminated with a backer sheet.

Any wall may be paneled by the wall paneling assembly and system of the current invention. The wall may be solid, such as plasterboard, or it may
10 be a frame, studs or some combination thereof or the like.

This invention has been described by reference to precise embodiments, but it will be appreciated by those skilled in the art that this invention is subject to various modifications, and to the extent that those modifications would be obvious to one of ordinary skill, they are considered
15 as being within the scope of the appended claims.

WHAT IS CLAIMED IS:

1. A panel piece comprised of a front side, a rear side, a pair of opposing side faces and a pair of opposing edge faces for interlockingly engaging the edge faces of a like panel;

one edge face being formed as an elongate projection and,

the second edge face being formed as an elongate recess for receiving said projection;

said recess being of greater depth than the length of said projection, such that when the panel is joined to a like panel, the assembled pair combine to afford a demarcation line in the form of an elongate space which extends inwardly from the respective ends of each opposing side face.

2. A panel assembly comprised of a plurality of like panel pieces joined to one another in matching engagement and secured to a support structure, each piece consisting essentially of a front side, a rear side, a pair of opposing side faces and a pair of opposing edge faces for interlockingly engaging the edge faces of a like panel;

one edge face being formed as an elongate projection and,

the second edge face being formed as an elongate recess for receiving said projection;

said recess being of greater depth than the length of said projection, such that when the panel is joined to a like panel, the assembled pair combine to afford a demarcation line in the form of an elongate space which extends

inwardly from the respective ends of each opposing side face.

3. The panel assembly of Claim 2 wherein the support structure is a studded frame.

4. The panel assembly of Claim 2 wherein the support structure is the wall of an elevator.

5. The panel assembly of Claim 2 wherein the panel pieces are secured to the support structure by adhesive means.

6. The panel assembly of Claim 2 wherein the panel pieces are secured to the structure by screw means.

7. The panel assembly of Claim 6 wherein the panel pieces are secured to the support structure via screws which are insertably threaded into screw holes in the rear leg of said panel piece.

8. The panel assembly of Claim 2 wherein the assembled paneling includes a top panel piece.

9. The paneling assembly of Claim 8 wherein a top panel piece contains a groove for receiving a molding piece equipped with a tongue, said

tongue being insertable into the groove of said top panel piece.

10. The panel assembly of Claim 2 wherein the assembled panel pieces contain an indented decorative shadow line.

11. The panel assembly of Claim 2 wherein a bottom panel piece contains a groove for receiving a molding piece equipped with a tongue, said tongue being insertable into the groove of said bottom panel piece.

12. A panel piece comprised of a front side, a rear side and a pair of opposing edge faces for interlockingly engaging the edge faces of a like panel; one edge face being formed as a tongue; and

the second edge face being formed as a groove comprised of a rear leg, a front leg and a base member, said rear leg being greater in length than said front leg;

said tongue being insertable within said groove, the depth of which is greater than the length of said tongue, so that in their assembled mode a space is formed between the tongue end and the base of the groove.

13. A panel assembly comprised of a plurality of like-panel pieces joined to one another in matching engagement and secured to a support structure, each panel piece consisting essentially of a front side, a rear side and a pair of opposing edge faces for interlockingly engaging the edge faces of a

like panel;

one edge face being formed as a tongue; and

the second edge face being formed as a groove comprised of a rear leg, a front leg and a base member, said rear leg being greater in length than said front leg;

said tongue being insertable within said groove, the depth of which is greater than the length of said tongue, so that in their assembled mode a space is formed between the tongue end and the base of the groove.

14. The panel assembly of Claim 13 wherein the support structure is a studded frame.

15. The panel assembly of Claim 13 wherein the support structure is the wall of an elevator.

16. The panel assembly of Claim 13 wherein the panel pieces are secured to the support structure by screw means.

17. A panel piece for constructing a paneled assembly made up of any number of such pieces disposed atop one another, said panel piece comprising:

a front side and a rear side,

two opposing edge faces, one edge face being formed with a beveled

recess which extends from one side of the panel piece to the other, said recess being defined by a projecting first flange whose outer wall is coextensive with the rear side of said panel piece,

a second edge face, also with a beveled recess which is matching of the beveled recess formed in the first edge face, said recess being defined by a projecting flange the length of which is greater than that of the first flange, such that the joining of two like panel pieces results in an elongate space which demarcates one piece from another.

18. A panel assembly comprised of a plurality of like panel pieces joined to one another in matching engagement and secured to a support structure, each panel piece comprising:

a front side and a rear side,

two opposing edge faces, one edge face being formed with a beveled recess which extends from one side of the panel piece to the other, said recess being defined by a projecting first flange whose outer wall is coextensive with the rear side of said panel piece,

a second edge face, also with a beveled recess which is matching of the beveled recess formed in the first edge face, said recess being defined by a projecting flange, the length of which is greater than that of the first flange, such that the joining of two like panel pieces affords an elongate space which demarcates one piece from another.

19. The panel assembly of Claim 18 wherein the support structure is a studded frame.

20. The panel assembly of Claim 18 wherein the support structure is the wall of an elevator.

21. The panel assembly of Claim 18 wherein the panel pieces are secured to the support structure by screw means.

22. The method for creating a panel assembly which comprises:

- (1) securing to a support structure a panel piece comprised of a front side, a rear side, a pair of opposing side faces and a pair of opposing edge faces for interlockingly engaging the edge faces of a like panel;
- (2) interlockingly engaging at least one like-configured panel piece to a second panel piece; and
- (3) forming *in situ* in the assembled panel pair a demarcation line in the form of an elongate space which extends inwardly from the respective ends of each opposing side face.

23. The method of Claim 22 wherein said panel pieces are secured to the wall of an elevator.

24. The method of Claim 22 wherein the panel pieces are secured to a wall by screw means.

25. The method of Claim 22 wherein the panel pieces are secured to a studded frame.

ABSTRACT OF THE DISCLOSURE

Panels which are joined at their opposing end faces are used to create a panel assembly. The opposing end faces may be a tongue and groove arrangement or they may consist of matching beveled recesses. In either case, the interrelationship between the opposing end faces is such that, upon assembly, an intervening space is created between adjoining panels. This intervening space eliminates the cantilever force effect associated with known panel assemblies and it results, instead, in a shear force which is evenly distributed over the full extent of the abutting panel faces.

Fig. 1

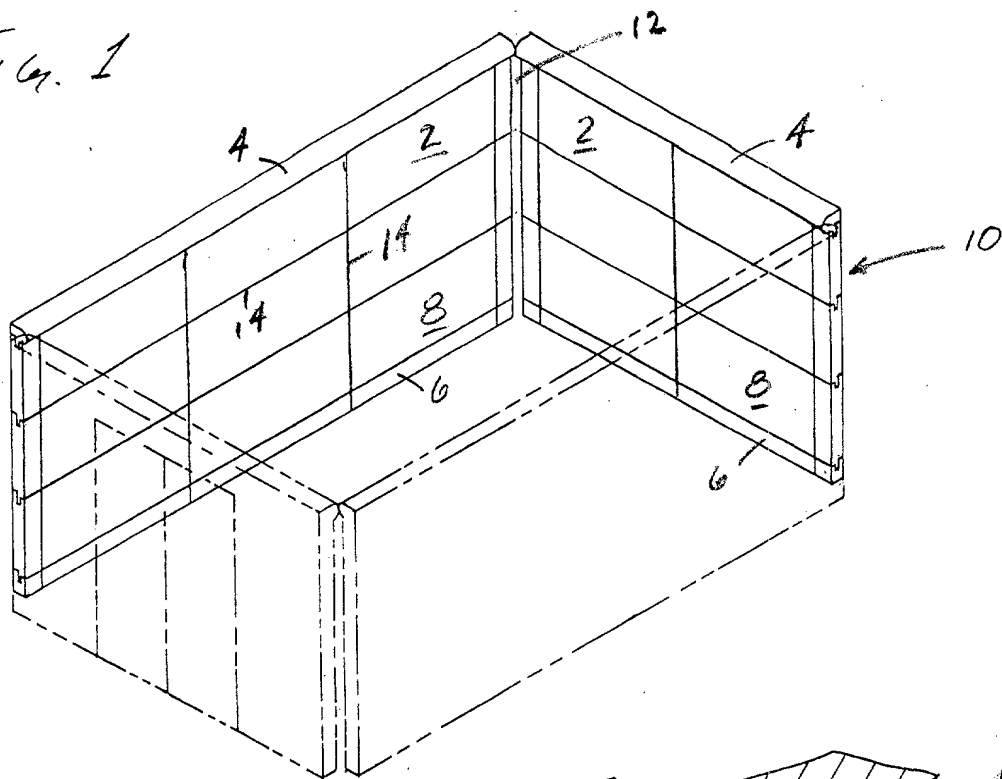
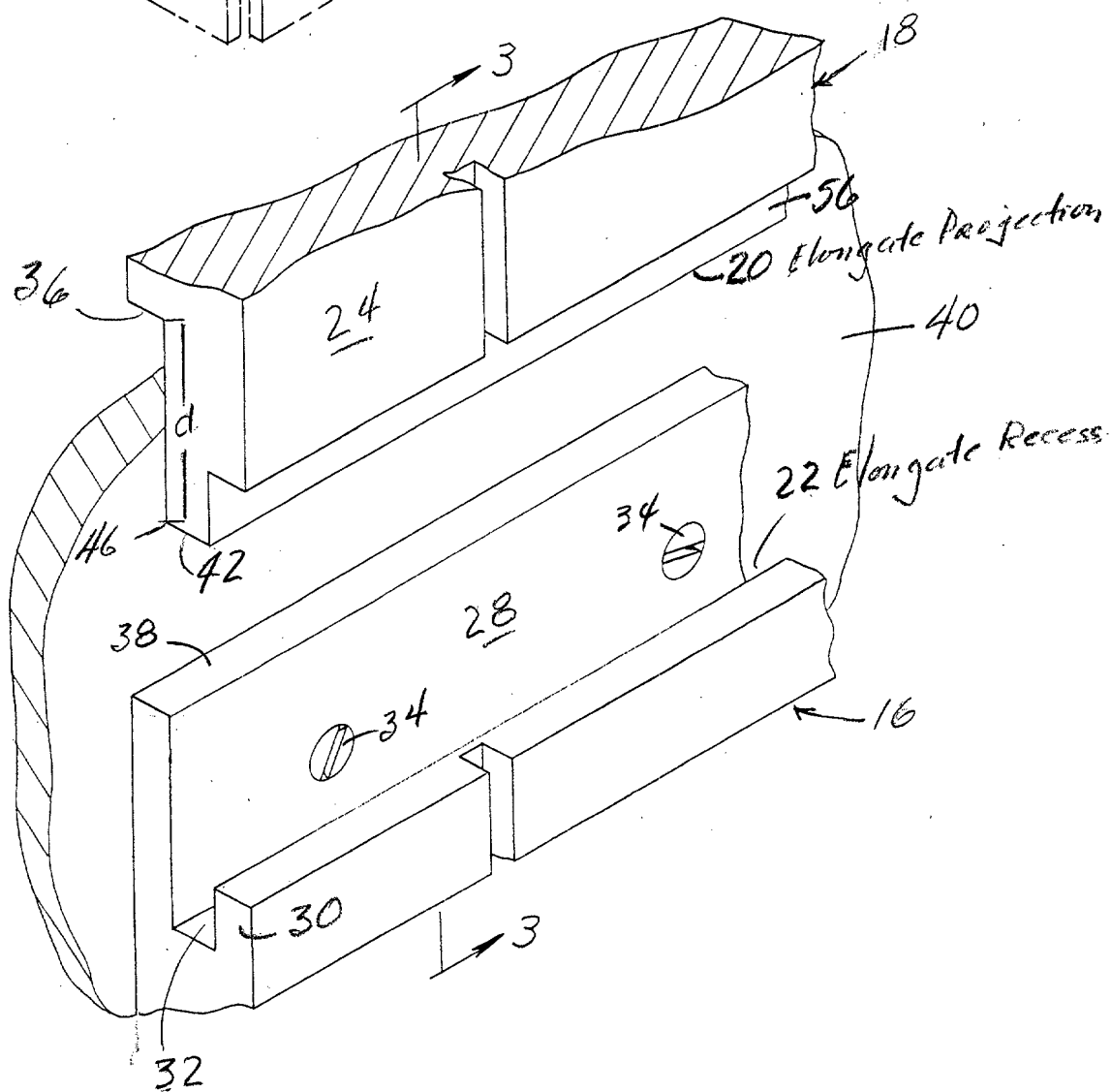
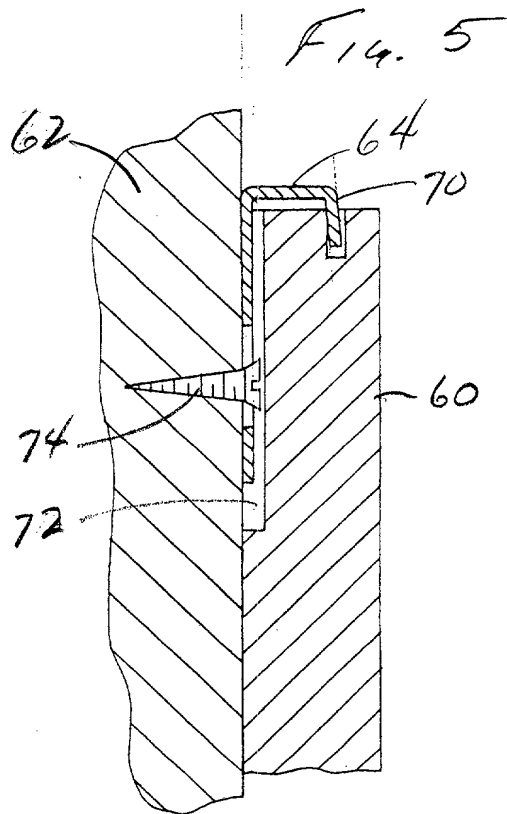
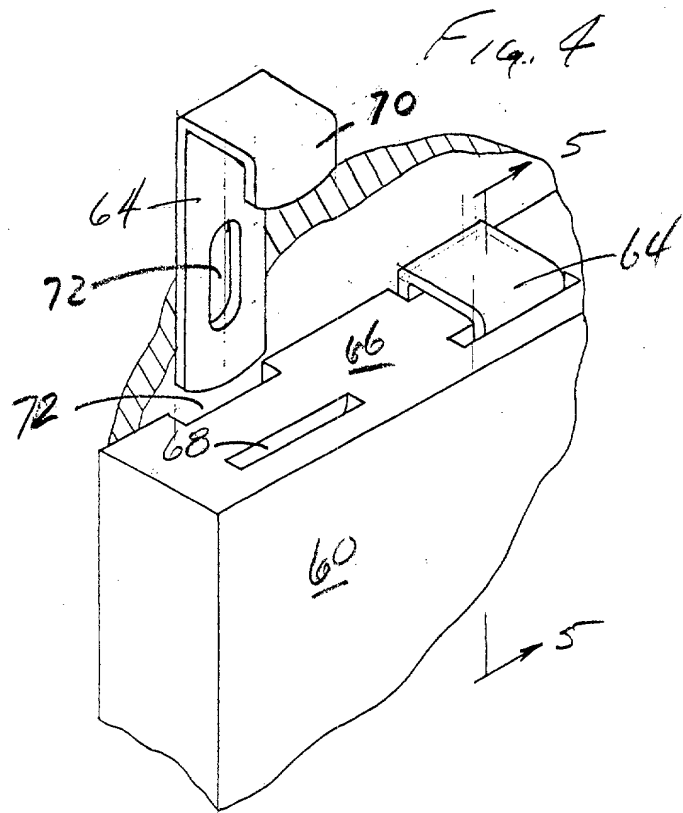
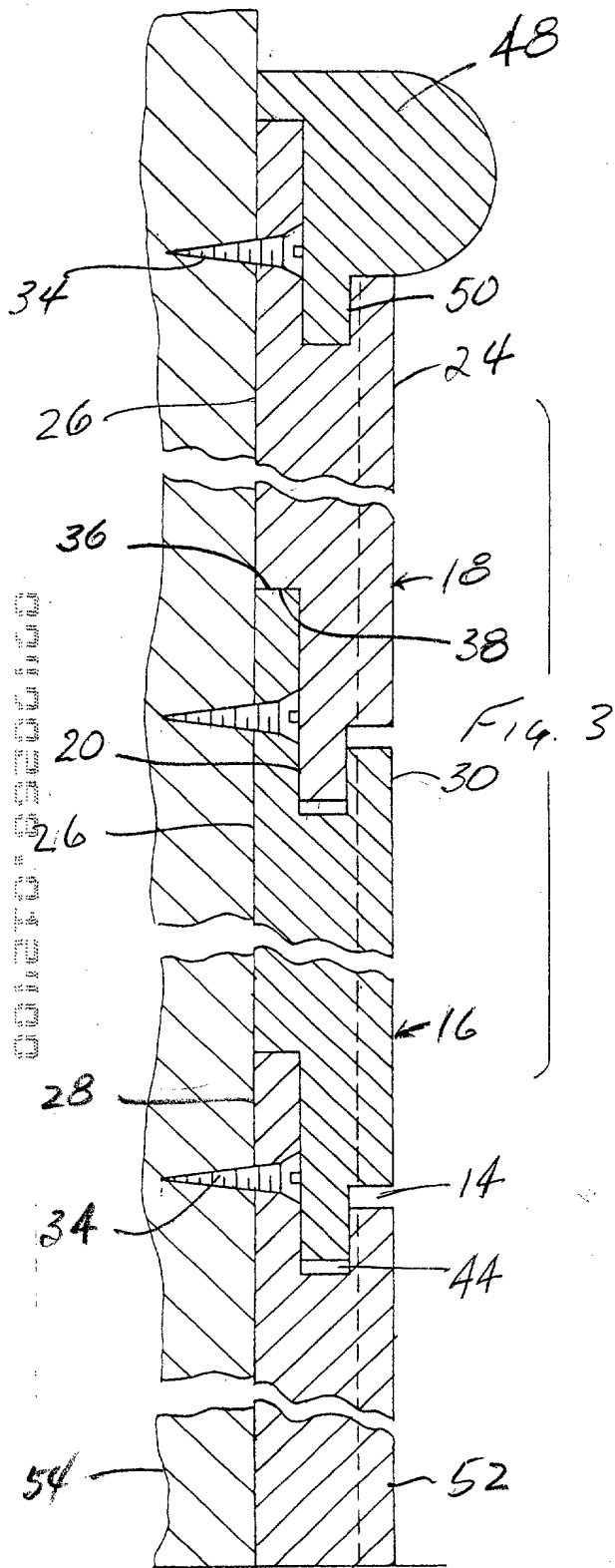


Fig. 2





F14.6

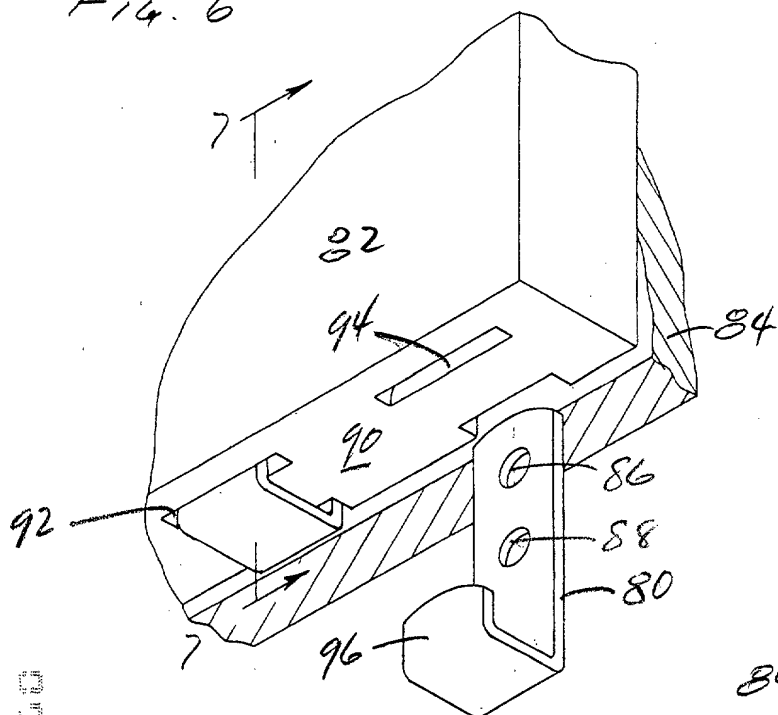
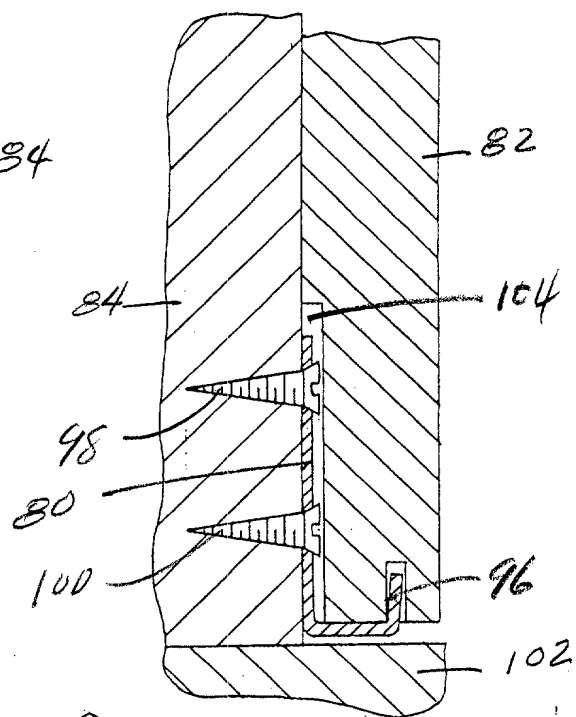


Fig. 7



F. 16. 8

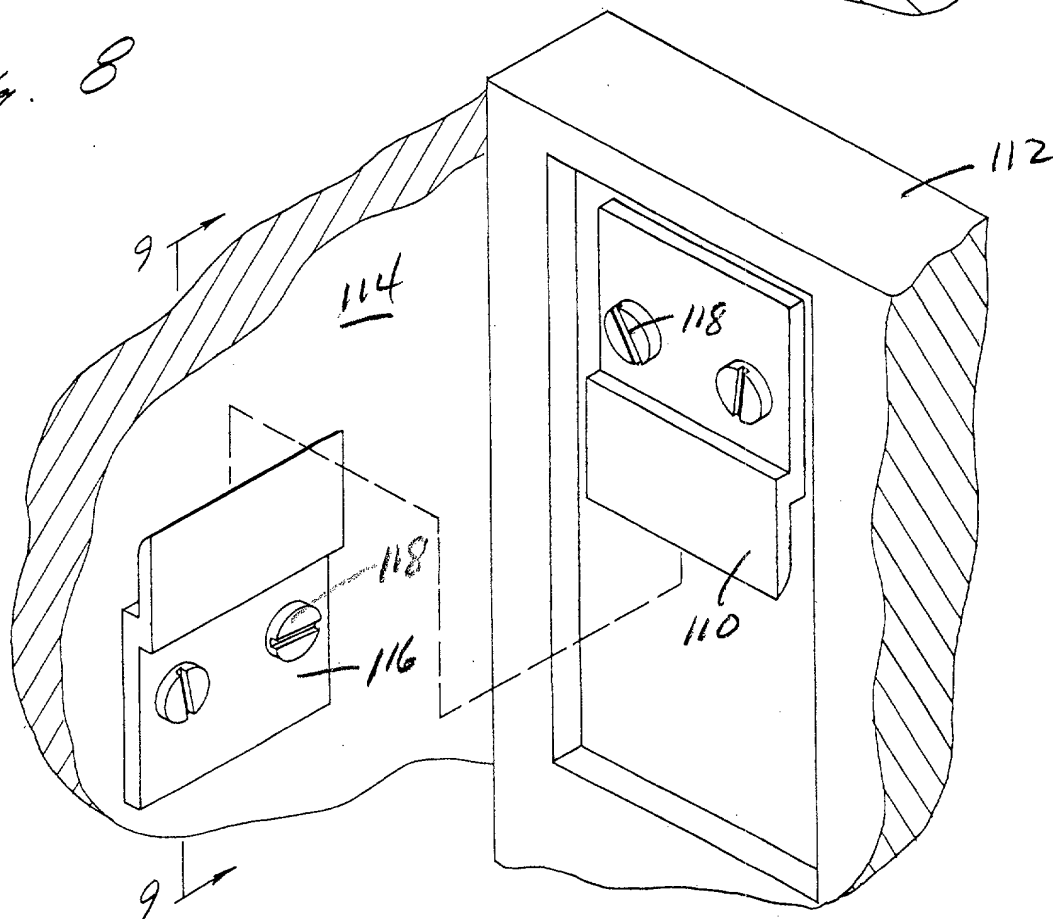


Fig. 9

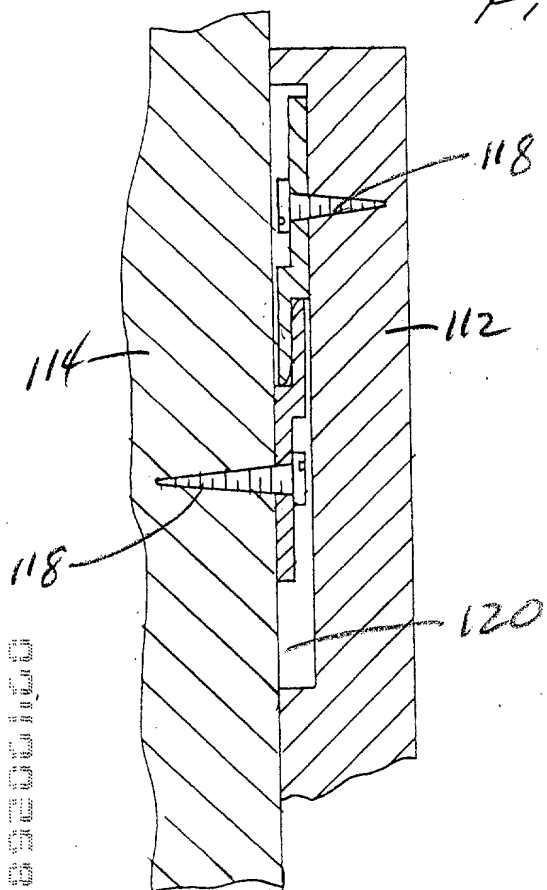
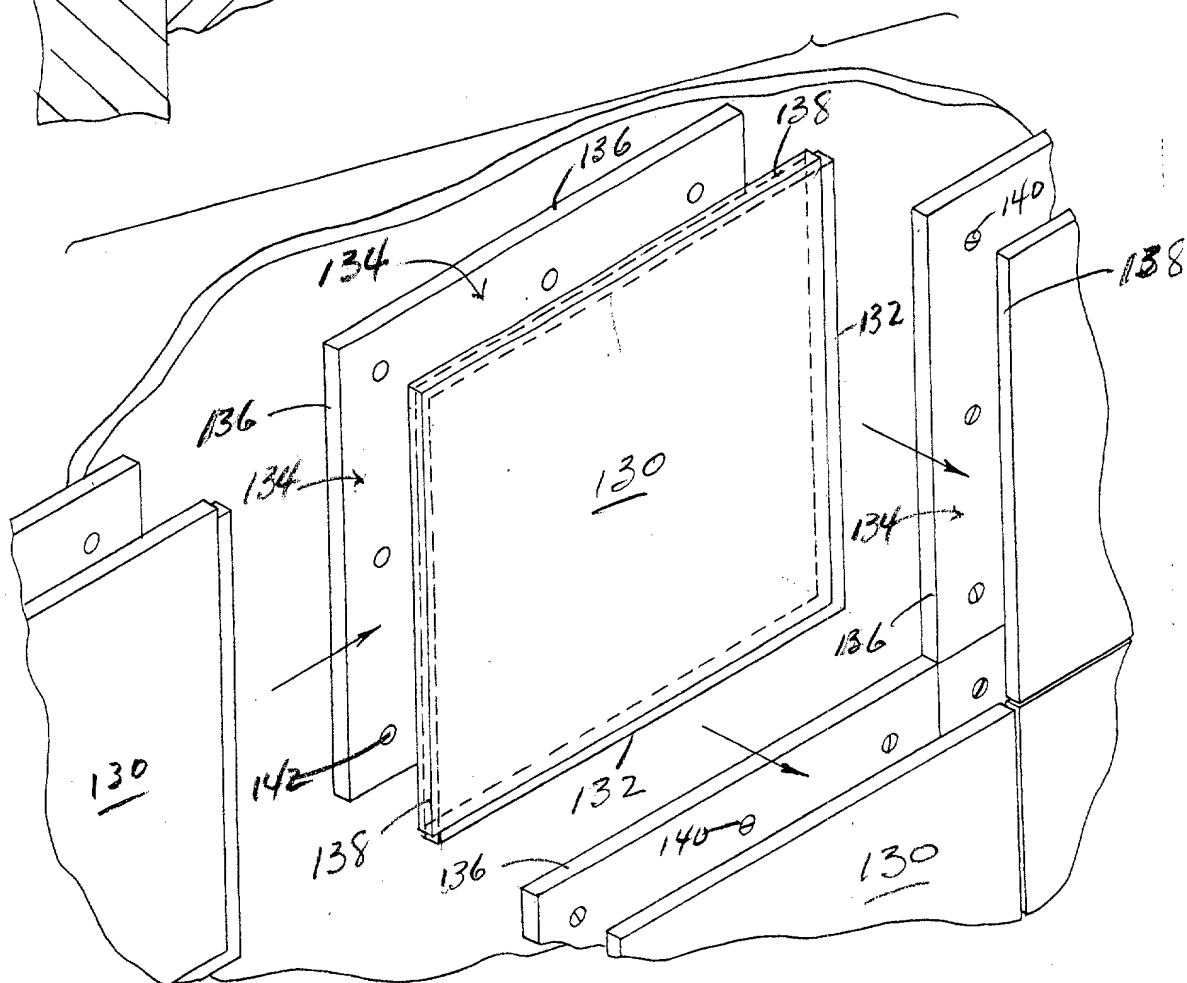


Fig. 10



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Fig. 11

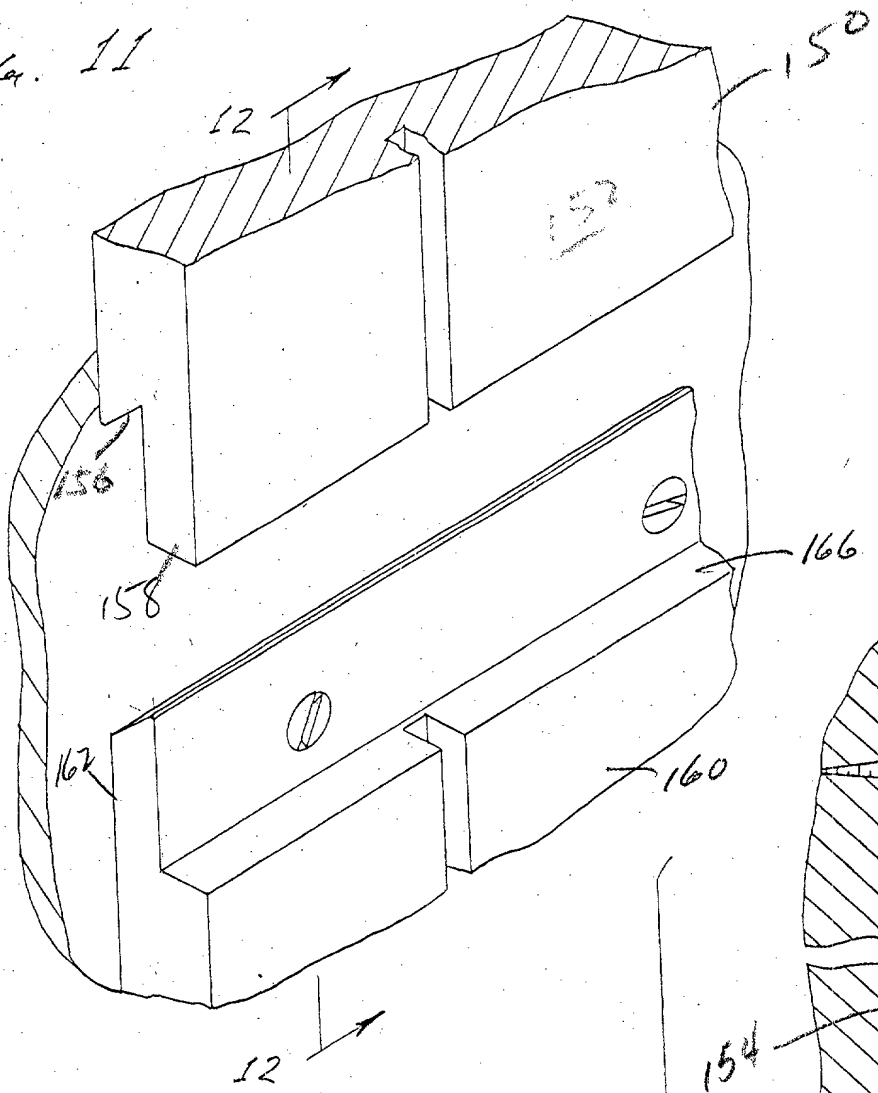
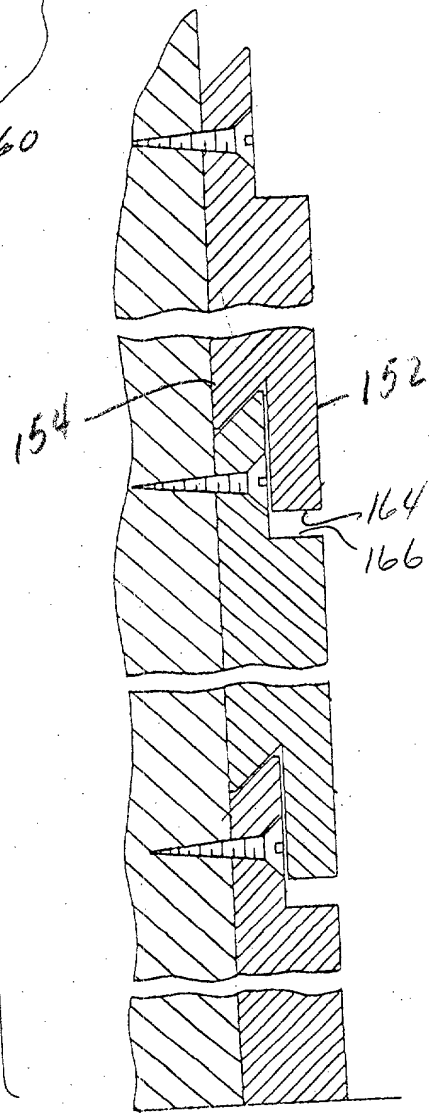


Fig. 12



DECLARATION AND POWER OF ATTORNEY--ORIGINAL APPLICATION

Attorney's Docket No. 720

As a below-named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled WALL PANELING ASSEMBLY AND SYSTEM, the specification of which

(check one) ☒ is attached hereto.
☐ was filed on _____ as
 Application Serial No. _____
 and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the content of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority	Claimed
			Yes	No
(Number)	(Country)	(Day/Month/Year Filed)		
			Yes	No
(Number)	(Country)	(Day/Month/Year Filed)		
			Yes	No
(Number)	(Country)	(Day/Month/Year Filed)		

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)	(Filing Date)	(Status-patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status-patented, pending, abandoned)

Power of Attorney: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (List name and registration number.) **Joseph W. Molasky** Reg. No. 20,951

SEND CORRESPONDENCE TO:

Joseph W. Molasky
4 S. Limekiln Pike
Chalfont, PA 18914

DIRECT TELEPHONE CALLS TO:
(name and telephone number)

Joseph W. Molasky
(215) 822-3324

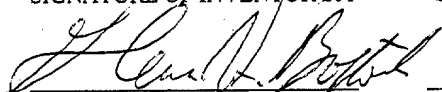
201 FULL NAME OF INVENTOR	FAMILY NAME BOSTOCK	FIRST GIVEN NAME GLENN	SECOND GIVEN NAME H.
RESIDENCE	CITY Hatboro	STATE OR FOREIGN COUNTRY Pennsylvania	COUNTRY OF CITIZENSHIP United States
POST OFFICE ADDRESS	POST OFFICE ADDRESS 440 Blairmill Road	CITY Hatboro	STATE & ZIP CODE / COUNTRY Pennsylvania 19440
202 FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
RESIDENCE	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP
POST OFFICE ADDRESS	POST OFFICE ADDRESS	CITY	STATE & ZIP CODE/COUNTRY
203 FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
RESIDENCE	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP
POST OFFICE ADDRESS	POST OFFICE ADDRESS	CITY	STATE & ZIP CODE/COUNTRY

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 201

SIGNATURE OF INVENTOR 202

SIGNATURE OF INVENTOR 203



DATE

1/22/99

DATE

DATE